

NOTES ON SOME THRIPS COLLECTED IN THE VICINITY OF BABYLON, LONG ISLAND, N. Y.

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During the period from 1931 to 1934 studies have been in progress at the Babylon, N. Y., field laboratory of the Bureau of Entomology and Plant Quarantine to determine whether insects or other arthropods are concerned in the spread of a virus disease of narcissus known as narcissus mosaic. One phase of these studies involved faunistic surveys to obtain information on the kinds and abundance of insects that occurred in narcissus plantings during the growing season and the relation that the insect fauna bear to the incidence of the disease. The insects were collected not only from narcissus within a given planting but also from all weeds and other plant growth present therein at the time of collection, as well as on other plants growing in close proximity to the narcissus planting. It was found that very few insects were able to breed on narcissus, and for this reason it seems evident that the weeds growing in close association with this flower may play an important role by harboring the vector of narcissus mosaic. During the first two seasons, 1931 and 1932, only a few thrips were collected. During 1933 and 1934, however, more extensive collections were made.

Only one insect other than thrips has been found which can breed on narcissus. Three species of thrips, *Frankliniella fusca* Hinds, *F. tritici* Fitch, and *Thrips tabaci* Lind., have this ability. There are several species of insects, however, that use narcissus

¹ The majority of the specimens discussed in this paper were collected by the writer; however, a number were collected by F. A. Haasis and F. J. Spruijt. The writer gratefully acknowledges the assistance rendered by those authorities who have identified the specimens, including J. R. Watson, J. C. Crawford, and Dudley Moulton.

To Dr. Hugh O'Neill the writer wishes to express his gratitude for assisting with the identification of plants and for suggestions from the viewpoint of systematic botany. The writer is responsible for all identifications where only the genus is given.

as an occasional or transitory host and have been observed feeding on narcissus. With the mixed flora usually present in narcissus fields it is not necessary for the insect to confine its feeding to narcissus.

Drake *et al.*² in their study of yellow dwarf of onions found that over 50 species of aphids served as the vector of the virus, but they did not find a single species that could breed or even live on onions for any length of time. For this reason they applied the name "transitory" host to the onion. Narcissus are like onions in this respect and to most species the plant juices are apparently poisonous.

In all tests performed thrips have given negative results as vectors of narcissus mosaic. Two species, *Frankliniella fusca* and *Thrips tabaci*, have been used in the writer's experiments and also by Dr. F. A. Haasis³, who has made extensive tests with *Thrips tabaci*.

Smith and Brooks⁴ have reviewed the literature and have given the kinds of insects responsible for the transmission of virus diseases.

Bailey⁵ has given a very complete review of the literature pertaining to thrips as vectors of plant diseases. This will not be reviewed here except to state that he points out the fact that only three species of thrips have been definitely proved to be vectors of two viruses while others are doubtfully incriminated.

It is quite possible that other species of thrips feed on narcissus, but up until this time the writer has found only the following: 1. *Aeolothrips bicolor* Hinds, 2. *Chirothrips manicatus* Hal., 3. *Frankliniella fusca* Hinds, 4. *Frankliniella tritici* Fitch, 5. *Thrips tabaci* Lind.

Aeolothrips bicolor was taken on narcissus on only a few occa-

² Drake, C. J., Tate, H. D., and Harris, H. M. The relationship of aphids to the transmission of yellow dwarf of onions. Jour. Econ. Ent. 26: 841-846. 1933.

³ Haasis, F. A. A study of narcissus mosaic with notes on other possible virus diseases of narcissus. Unpublished thesis, Department of Plant Pathology, Cornell University, 1935.

⁴ Smith, K. M., and Brooks, F. I. Recent advances in the study of plant viruses. Blakiston, Philadelphia, 1934.

⁵ Bailey, S. F. Thrips as vectors of plant diseases. Jour. Econ. Ent. 28: 856-863. 1935.

sions. *Chirothrips manicatus* is usually fairly common on narcissus during May. Although this species is found on several plants, it seems to be most abundant on grasses. *Frankliniella fusca* was fairly common on narcissus foliage during June and July. *Frankliniella tritici* is abundant on narcissus during the latter part of May, and through June and July, although a few specimens have been found on narcissus in April. This species is associated with many of the grass and weed flowers, and about 75 hosts are recorded in this paper. *Thrips tabaci* occurs quite commonly on narcissus from May until August. This species has also been collected in April. During July of 1934 F. A. Haasis and the writer collected this species in a commercial narcissus planting which showed 90 per cent of the foliage to be injured.

The following list gives the scientific and common names of the host plants followed by the species of thrips found on these plants. In the list immediately following, the host-plant list, the thrips are given alphabetically, together with the localities and the months of the year in which they were collected. The writer realizes that many other species of thrips could perhaps be collected in the vicinity of Babylon, N. Y., but, as mentioned previously, this survey was confined to narcissus plantings and adjacent territory. In spite of these restrictions, however, several species new to New York were found.

Acalypha virginica L., three-seeded mercury. *Frankliniella tritici* Fitch.

Achillea Millefolium L., milfoil. *Frankliniella tritici* Fitch; *Haplothrips leucanthemi* (Schrank); *Haplothrips niger* (Osb.); *Thrips tabaci* Lind.

Agropyron repens (L.) Beauv., quackgrass. *Frankliniella tritici* Fitch.

Agrotis alba L., redtop. *Aeolothrips bicolor* Hinds; *Anaphothrips obscurus* Muller; *Aptinothrips rufus* (Gmelin); *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Hoplothrips pergandi* Hinds.

Amaranthus retroflexus L., pigweed. *Chirothrips obesus* Hinds; *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.

- Ambrosia elatior** L., ragweed. *Frankliniella tritici* Fitch; *Thrips nigropilosus* Uzel; *Thrips tabaci* Lind.
- Anagallis arvensis** L., common pimpernell. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch.
- Arctium minus** Bernh., common burdock. *Frankliniella tritici* Fitch.
- Arisæma triphyllum** (L.) Schott., jack-in-the-pulpit. *Ctenothrips bridwelli* Franklin; *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Arrhenatherum elatius** (L.) Beauv., oatgrass. *Frankliniella tritici* Fitch.
- Asclepias syriaca** L., common milkweed. *Aeolothrips fasciatus* L.; *Frankliniella tritici* Fitch; *Leptothrips mali* (Fitch); *Limothrips cerealium* Hal.
- Asclepias tuberosa** L., butterfly weed. *Frankliniella tritici* Fitch; *Frankliniella williamsi* Hood.
- Aster** sp., wild aster. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch; *Haplothrips subtilissimus* (Hal.); *Thrips tabaci* Lind.
- Azalea** sp., azalea. *Frankliniella tritici* Fitch; *Heterothrips lyonia* Hood; *Heterothrips azaleæ* Hood.
- Berberis vulgaris** L., common barberry. *Frankliniella tritici* Fitch; *Haplothrips subtilissimus* (Hal.); *Thrips tabaci* Lind.
- Betula nigra** L., birch. *Aeolothrips bicolor* Hinds; *Thrips tabaci* Lind.
- Brassica campestris** L., rutabaga. *Leptothrips mali* (Fitch); *Thrips tabaci* Lind.
- Carya** sp., hickory. *Frankliniella tritici* Fitch.
- Chenopodium album** L., lamb's-quarters. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Chrysanthemum Leucanthemum** L., ox-eye daisy. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips leucanthemi* (Schränk); *Haplothrips niger* (Osborne); *Thrips tabaci* Lind.
- Convolvulus arvensis** L., field bindweed. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips subtilissimus* (Hal.).
- Coreopsis lanceolata** L., tickseed. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.

- Daucus carota* L., carrot. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Digitaria sanguinalis* L. Scop., crabgrass. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Equisetum arvense* L., common horsetail. *Frankliniella tritici* Fitch.
- Erechtites hieracifolia* (L.) Raf., burnweed. *Frankliniella tritici* Fitch.
- Erigeron canadensis* L., horseweed. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Erigeron ramosus* (Walt.) BSP., daisy fleabane. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch; *Haplothrips leucanthemi* (Schrank); *Haplothrips niger* (Os.); *Thrips tabaci* Lind.
- Eupatorium* sp., thoroughwort. *Frankliniella tritici* Fitch.
- Fagopyron vulgare* Hill, common buckwheat. *Frankliniella tritici* Fitch; *Limothrips cerealium* Hal.; *Thrips tabaci* Lind.
- Fragaria* sp., wild strawberry. *Frankliniella tritici* Fitch.
- Galinoga parviflora* Cav., quickweed. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Gladiolus*, glads. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Tæniothrips simplex* Morison.
- Gnaphalium sylvaticum* L., cudweed. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch; *Thrips tabaci* Lindeman.
- Habenaria blephariglottis* (Willd.) Torr., white-fringed orchid. *Frankliniella tritici* Fitch.
- Helenium* sp., sneezeweed. *Haplothrips niger* (Os.); *Limothrips cerealium* Hal.; *Thrips tabaci* Lind.; *Zygothrips harti* Hood.
- Hieracium aurantiacum* L., orange hawkweed. *Frankliniella tritici* Fitch.
- Hypericum* sp., St. John'swort. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips leucanthemi* (Schrank); *Thrips tabaci* Lind.
- Iris* sp., iris. *Bregmatothrips iridis* Watson; *Frankliniella tritici* Fitch.
- Lactuca canadensis* L., wild lettuce. *Frankliniella tritici* Fitch.
- Lepidium virginicum* L., wild pepper-grass. *Frankliniella*

- tritici* Fitch; *Haplothrips subtilissimus* (Hal.); *Thrips tabaci* Lind.
- Leucothœ** sp., fetterbush. *Frankliniella tritici* Fitch.
- Lilium canadense** L., wild yellow lily. *Ctenothrips bridwelli* Franklin; *Frankliniella tritici* Fitch.
- Linaria canadensis** (L.) Dumont, old field toad-flax. *Frankliniella tritici* Fitch.
- Linaria vulgaris** Hill, butter-and-eggs. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Malva rotundifolia** L., common mallow. *Frankliniella tritici* Fitch.
- Mollugo verticillata** L., carpetweed. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch.
- Narcissus Pseudo-narcissus** L., daffodil. *Aeolothrips bicolor* Hinds; *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Oxalis stricta** L., common yellow oxalis. *Frankliniella tritici* Fitch.
- Panicum** sp., grass. *Anaphothrips obscurus* Muller; *Aptinothrips rufus* (Gmelin); *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch; *Limothrips cerealium* Hal.; *Thrips tabaci* Lind.
- Phleum pratense** L., timothy. *Frankliniella tritici* Fitch.
- Phlox** sp., wild phlox. *Frankliniella tritici* Fitch; *Haplothrips subtilissimus* (Hal.).
- Phytolacca decandra** L., pokeweed. *Frankliniella tritici* Fitch.
- Plantago lanceolata** L., buckhorn plantain. *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips leucanthemi* (Schrank); *Haplothrips niger* (Qsb.); *Thrips tabaci* Lind.
- Plantago rugelii** Dene., plantain. *Frankliniella tritici* Fitch.
- Poa palustris** L., grass. *Aptinothrips rufus* (Gmelin); *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella nervosa* (Uzel); *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Polygala lutea** L., milkwort. *Aeolothrips bicolor* Hinds; *Frankliniella fusca* (Hinds).
- Polygonum aviculare** L., knotweed. *Frankliniella fusca* (Hinds); *Thrips tabaci* Lind.

- Polygonum Convolvulus** L., cornbind. *Frankliniella tritici* Fitch.
- Polygonum Persicaria** L., lady'sthumb. *Aeolothrips bicolor* Hinds; *Aeolothrips fasciatus* L.; *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch.
- Portulaca oleraceæ** L., common purslane. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch.
- Potentilla** sp., five-finger. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Pyrus arbutifolia** (L.) L. f., choke-cherry. *Frankliniella tritici* Fitch.
- Pyrus Malus** (L.) F. S. Gray, apple. *Hoplothrips major* Hood.
- Prunus** sp., wild cherry. *Chirothrips manicatus* Hal.; *Frankliniella tritici* Fitch.
- Raphanus raphanistrum** L., wild radish. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Hoplothrips leucanthemi* (Schrank); *Thrips tabaci* Lind.; *Thrips physapus* L.
- Rhus copallina** L., dwarf sumac. *Frankliniella tritici* Fitch; *Rhynchothrips usitatus* Hood; *Thrips tabaci* Lind.
- Robinia pseudoacacia** L., locust. *Frankliniella tritici* Fitch.
- Rosa** sp., wild rose. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Rudbeckia hirta** L., black-eyed Susan. *Frankliniella tritici* Fitch; *Limothrips cerealium* Hal.
- Rumex Acetosella** L., sheep sorrel. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Rumex crispus** L., curly dock. *Frankliniella tritici* Fitch.
- Rumex obtusifolius** L., bitter dock. *Chirothrips manicatus* Hal.; *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Sambucus canadensis** L., common elder. *Frankliniella tritici* Fitch; *Liothrips sambuci* Hood; *Thrips tabaci* Lind.
- Sericocarpus asteroides** (L.) BSP., white-topped aster. *Frankliniella tritici* Fitch; *Hoplothrips leucanthemi* (Schrank); *Thrips tabaci* Lind.
- Solidago** sp., goldenrod. *Frankliniella tritici* Fitch; *Hoplothrips subtilissimus* (Hal.); *Hoplothrips leucanthemi*

- (Schrank); *Thrips (Microcephalothrips) abdominalis* Crawford; *Thrips tabaci* Lind.
- Sphenopholis nitida** (Spreng.), grass. *Frankliniella tritici* Fitch.
- Symplocarpus foetidus** (L.) Nutt., skunk cabbage. *Ctenothrips bridwelli* Franklin.
- Taraxacum officinale** Weber, common dandelion. *Frankliniella tritici* Fitch; *Thrips physapus* L.
- Trifolium arvense** L., rabbit clover. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips niger* (Osb.).
- Trifolium pratense** L., red clover. *Frankliniella tritici* Fitch; *Thrips tabaci* Lind.
- Trifolium repens** L., white clover. *Frankliniella fusca* (Hinds); *Frankliniella tritici* Fitch; *Haplothrips graminis* Hood; *Thrips tabaci* Lind.
- Verbascum Thapsus** L., common mullein. *Chirothrips manicatus* Hal.; *Elaphrothrips armatus* Hood; *Frankliniella tritici* Fitch; *Neoheegeria verbasci* (Osb.).
- Verbena** sp., verbena. *Frankliniella tritici* Fitch; *Haplothrips substillissimus* (Hal.); *Thrips tabaci* Lind.
- Vernonia noveboracensis** (L.) Willd., ironweed. *Frankliniella tritici* Fitch.
- Vicia Cracca** L., vetch. *Frankliniella tritici* Fitch.
- Yucca** sp., bear grass. *Bagnalliella yuccæ* (Hinds).
- Zea Mays** L., corn. *Frankliniella tritici* Fitch.

LIST OF THRIPS, LOCALITY, DATES OF COLLECTION,
AND HOST PLANTS

(Those species marked with an asterisk (*) are, as far as the writer knows, new to New York State.)

- Aeolothrips bicolor** Hinds. Babylon, July-Aug.; Dix Hills, July; Brightwaters, July. On *Agrostis alba*, *Betula nigra*, *Narcissus Pseudo-narcissus*, *Polygala lutea*, *Polygonum Persicaria*.
- Aeolothrips fasciatus** L. Babylon, June; Yaphank, Aug. On *Asclepias syriaca*, *Polygonum Persicaria*.
- Anaphothrips obscurus** Muller. Babylon, May-June; Westbury, July. On *Agrostis alba*; *Panicum* sp.

- Aptinothrips rufus** (Gmelin). Babylon, July; Westbury, July.
On *Agrostis alba*, *Panicum* sp., *Poa palustris*.
- ***Bagnalliella yuccæ** (Hinds) (det. Watson). Babylon, May–June. On *Yucca* sp.
- Bregmatothrips iridis** Watson. Brooklyn, Oct. (F. F. Smith).
On *Iris* sp.
- Chirothrips manicatus** Hal. Babylon, May–Sept.; Yaphank, Aug.; Westbury, July. On *Agrostis alba*; *Aster* sp.; *Digitaria sanguinalis*; *Erigeron ramosus*; *Gnaphalium sylvaticum*; *Narcissus Pseudo-narcissus*; *Panicum* sp.; *Plantago lanceolata*; *Poa palustris*; *Polygonum Persicaria*; *Portulaca oleracea*; *Prunus* sp.; *Rumex obtusifolius*; *Verbascum Thapsus*.
- Chirothrips obesus** Hinds. Babylon, Aug. On *Amaranthus retroflexus*.
- Ctenothrips bridwelli** Franklin. Babylon, June–Aug.; Huntington, Aug.; Islip, Aug. On *Arisæma triphyllum*; *Lilium canadense*; *Symplocarpus fætidus*.
- ***Elaphrothrips armatus** Hood (det. Watson). Babylon, May.
On *Verbascum Thapsus*.
- Frankliniella fusca** (Hinds). Babylon, June–Sept.; Yaphank, June; Brightwaters, July. On *Agrostis alba*; *Anagallis arvensis*; *Chenopodium album*; *Chrysanthemum Leucanthemum*; *Convolvulus arvensis*; *Gladiolus*; *Hypericum* sp.; *Mollugo verticillata*; *Narcissus Pseudo-narcissus*; *Plantago lanceolata*; *Poa palustris*; *Polygala lutea*; *Polygonum aviculare*; *Polygonum Persicaria*; *Raphanus raphanistrum*; *Rumex obtusifolius*; *Trifolium arvense*; *Trifolium repens*.
- ***Frankliniella nervosa** (Uzel) (det. Watson). Yaphank, Aug.
On *Poa palustris*.
- Frankliniella tritici** Fitch. Babylon, Mar.–Sept.; Islip, July; Deer Park, Aug., Dix Hills, July; Huntington, Aug.; Brightwaters, July. On *Acalypha virginica*; *Achillea millefolium*; *Agropyron repens*; *Agrostis alba*; *Amaranthus retroflexus*; *Ambrosia elatior*; *Anagallis arvensis*; *Arctium minus*; *Arisæma triphyllum*; *Pyrus arbutifolia*; *Arrenatherum elatius*; *Asclepias syriaca*; *Asclepias tuberosa*; *Aster* sp.; *Azalea* sp.; *Berberis vulgaris*; *Betula nigra*; *Brassica campestris*; *Carya*

sp.; *Chenopodium album*; *Chrysanthemum Leucanthemum*; *Convolvulus arvensis*; *Coreopsis lanceolata*; *Daucus carota*; *Digitaria sanguinalis*; *Equisetum arvense*; *Erechtites hieracifolia*; *Erigeron canadensis*; *Erigeron ramosus*; *Eupatorium* sp.; *Fagopyron vulgare*; *Fragaria* sp.; *Galinsoga parviflora*; *Gladiolus*; *Gnaphalium sylvaticum*; *Habenaria blephariglottis*; *Hieracium aurantiacum*; *Hypericum* sp.; *Iris* sp.; *Lactuca canadensis*; *Lepidium virginicum*; *Leucothæa* sp.; *Lilium canadense*; *Linaria canadensis*; *Linaria vulgaris*; *Malva rotundifolia*; *Mollugo verticillata*; *Narcissus Pseudonarcissus*; *Oxalis stricta*; *Panicum* sp.; *Phleum pratense*; *Phlox* sp.; *Phytolacca decandra*; *Plantago lanceolata*; *Plantago Rugelii*; *Poa palustris*; *Polygonum Convolvulus*; *Polygonum Persicaria*; *Portulaca oleracea*; *Potentilla* sp.; *Prunus* sp.; *Raphanus raphanistrum*; *Rhus copallina*; *Robinia Pseudoacacia*; *Rosa* sp.; *Rudbeckia hirta*; *Rumex acetosella*; *Rumex crispus*; *Rumex obtusifolius*; *Sambucus canadensis*; *Sericocarpus asteroides*; *Solidago* sp.; *Sphenopholis nitida*; *Symplocarpus fœtidus*; *Taraxacum officinale*; *Trifolium arvense*; *Trifolium pratense*; *Trifolium repens*; *Verbascum Thapsus*; *Verbena* sp.; *Vernonia noveboracensis*; *Vicia Cracca*; *Zea Mays*.

- ***Frankliniella williamsi** Hood (det. Watson). Dix Hills, July.
On *Asclepias tuberosa*.
- Haplothrips graminis** Hood. Babylon, June. On *Trifolium repens*.
- Haplothrips leucanthemi** (Schränk). Babylon, May–July; Islip, July; Dix Hills, July; Brightwaters, July. On *Achillea millefolium*; *Chrysanthemum Leucanthemum*; *Erigeron ramosus*; *Hypericum* sp.; *Plantago lanceolata*; *Raphanus raphanistrum*; *Sericocarpus asteroides*; *Solidago* sp.
- ***Haplothrips niger** (Osb.) (det. Watson). Babylon, June–Aug. On *Achillea millefolium*; *Chrysanthemum Leucanthemum*; *Erigeron ramosus*; *Plantago lanceolata*; *Trifolium arvense*.
- ***Haplothrips pergandei** Hinds (det. Watson). Babylon, Aug. On *Agrostis alba*.
- ***Haplothrips subtilissimus** (Haliday) (det. Crawford). Babylon, Aug.–Sept. On *Aster* sp., *Berberis vulgaris*; *Convolvulus*

- lus arvensis*; *Lepidium virginicum*; *Phlox* sp.; *Solidago* sp.;
Verbena sp.
- ***Heterothrips azaleæ** Hood (det. Watson). Babylon, July.
On *Azalea* sp.
- ***Heterothrips lyoniæ** Hood (det. Watson). Babylon, July.
On *Azalea* sp.
- Hoplothrips major** (Hood). Babylon, July. Under bark of
dead apple tree.
- Leptothrips mali** (Fitch). Babylon, July; Brightwaters,
July; Westbury, July. On *Asclepias syriaca*; *Brassica*
campestris.
- ***Limothrips cerealium** Hal. (det. Watson). Babylon, July.
On *Asclepias syriaca*; *Fagopyron vulgare*; *Helenium* sp.,
Panicum sp., *Rudbeckia hirta*.
- ***Liothrips sambuci** Hood (det. Watson). Yaphank, Aug. On
Sambucus canadensis.
- Neoheegeria verbasci** (Osb.). Babylon, Jan.–July; Islip; Sept.
On *Verbascum Thapsus*.
- Rhynchothrips usitatus** Hood. Babylon, July; Islip, July;
Lindenhurst, July. On *Rhus copallina*.
- Sericothrips cingulata** Hood. Babylon. No data available.
Reported from Ithaca by Hood (May) in stomach of young
trout. A grass species.
- Tæniothrips simplex** Morison. Babylon, Feb. On *Gladiolus*
bulbs in storage during the entire winter. Collections from
foliage and flowers are represented from March to August.
The species is still a serious pest in this locality.
- ***Thrips (Microcephalothrips) abdominalis** Crawford (det.
Watson). Babylon, Sept. On *Solidago* sp.
- Thrips nigropilosus** Uzel. Babylon, June On *Ambrosia*
elator.
- Thrips tabaci** Lind. Babylon, April–Sept.; Deer Park, Aug.;
Huntington, Aug.; Dix Hills, July; Westbury, July; Yap-
hank, August. On *Achillea millefolium*; *Amaranthus retro-*
flexus; *Ambrosia elator*; *Arisæma triphyllum*; *Aster* sp.;
Berberis vulgaris; *Betula nigra*; *Brassica campestris*;
Chenopodium album; *Chrysanthemum Leucanthemum*; *Co-*
reopsis lanceolata; *Daucus carota*; *Digitalia sanguinalis*;

Erigeron canadensis; *Erigeron ramosus*; *Fagopyron vulgare*; *Galinsoga parviflora*; *Gnaphalium sylvaticum*; *Helenium* sp.; *Hypericum* sp.; *Lepidium virginicum*; *Linaria vulgaris*; *Narcissus Pseudo-narcissus*; *Panicum* sp.; *Plantago lanceolata*; *Poa palustris*; *Polygonum aviculare*; *Potentilla* sp.; *Raphanus raphanistrum*; *Rhus copallina*; *Rosa* sp.; *Rumex acetosella*; *Rumex obtusifolius*; *Sambucus canadensis*; *Sericocarpus asteroides*; *Solidago* sp.; *Trifolium pratense*; *Trifolium repens*; *Verbena* sp.

**Thrips physapus* L. (det. Crawford). Babylon, May–July, Sept. On *Raphanus raphanistrum*; *Taraxacum officinale*.

**Zygothrips harti* Hood. (det. Watson). Babylon, July. On *Helenium* sp.

